

## WHAT IS CLAIMED IS:

1. A traveling-wave amplifier having  $\pi$ -type output transmission line structure wherein in a periodic manner

5 (a) the drain terminal of FET(1) is connected between drain lines,  $L_d/2(1)$  and  $L_d/2(2)$ ,

(b) the additional capacitance  $C_3(1)$  is connected between drain lines  $L_d/2(2)$  and  $L_d/2(3)$ ,

10 (c) the gate terminal of the said FET(2) is connected between  $L_g(1)$  and  $L_g(2)$ .

2. According to Claim 1, the traveling-wave amplifier having  $\pi$ -type output transmission line structure wherein  $x$  value representing the location of the additional capacitance ( $C_3$ ) is  $0 < x < 1$ . If the length of the drain line between drain terminals of the said FET(1) and FET(2) is represented as  $L_d$ , the length of the said drain lines  $L_d/2(1)$  and  $L_d/2(3)$  is  $(1-x)L_d$  and that of the said drain lines  $L_d/2(2)$  and  $L_d/2(4)$  is  $x L_d$ .

20 3. According to Claim 1, the traveling-wave amplifier having  $\pi$ -type output transmission line structure wherein the most effective bandwidth improvement can be gained when the  $x$  value is 0.5, where the additional capacitance  $C_3$  is placed in the middle of the output transmission line ( $L_d$ ).